

D2 aperture 92. The swirl disk 88, as shown in Figs. 2A, 2B and 4A, has a plurality of slots 100 that corresponds to the plurality of fuel passage openings 94 in the guide disk 86. Each of the slots 100 extends tangentially from the respective fuel passage openings 94 to the central aperture 92--

IN THE CLAIMS:

Please amend claims 1 and 3 as follow:

D3 Sub A1 1. (Thrice Amended) A direct injection fuel injector having a fuel inlet, a fuel outlet, and a fuel passageway extending from the fuel inlet to the fuel outlet along a longitudinal axis, the fuel injector comprising:

a body having an inlet portion, an outlet portion, a neck portion disposed between the inlet portion and the outlet portion, the neck portion including a metallic cylindrical annulus that provides a body passage extending from the inlet portion to the outlet portion along the longitudinal axis of the fuel injector;

an armature proximate the inlet portion of the body;

a cylindrical needle operatively connected to the armature;

a seat disposed at the outlet portion of the body; and

a swirl generator proximate the seat and having a generally constant cross-section between an outer perimeter and a central aperture, the swirl generator having a guide disk contiguous to a flat disk;

wherein the cylindrical annulus of the body includes an inner diameter that is greater than a diameter of the cylindrical needle so as to define the body passage, which maintains an operative relationship between the body and the needle when the body is exposed to operating temperatures of a cylinder of an engine.

D4 Sub A1 3. (Thrice Amended) A direct injection fuel injector having a fuel inlet, a fuel outlet, and a fuel passageway extending from the fuel inlet to the fuel outlet along a longitudinal axis, the fuel injector comprising:

a body having an inlet portion, an outlet portion, a neck portion disposed between the inlet portion and the outlet portion, the neck portion including a cylindrical annulus that provides

a body passage extending from the inlet portion to the outlet portion along the longitudinal axis of the fuel injector;

an armature proximate the inlet portion of the body;

a cylindrical needle operatively connected to the armature;

a seat disposed at the outlet portion of the body, the seat having a first surface intersecting a second surface, the first surface generally perpendicular to the longitudinal axis and the second surface generally oblique to the seat and adapted to engage the needle in an unactuated position of the needle; and

04 a swirl generator contiguous to the first surface of the seat, the swirl generator having a guide disk contiguous to a flat disk;

wherein the cylindrical annulus of the body includes an inner diameter that is greater than a diameter of the cylindrical needle so as to define the body passage, which maintains an operative relationship between the body and the needle when the body is exposed to operating temperatures of a cylinder of an engine, and wherein the seat includes a first surface exposed to the fuel passageway and a second surface exposed to an exterior of the fuel injector, the first surface being spaced from the second surface a defined distance along the longitudinal axis, the first surface having at least one cut-out configuration that extends for a fraction of the defined distance into an interior of seat.
